REMARKS

Reconsideration of the application and entry of the amendment are respectfully requested. Claims 1 to 48 are currently pending, and no claims have been amended.

The Office Action mailed June 18, 2002 addressed Claims 1 to 48. Claims 1 to 48 were rejected.

Claim 15, 42 and 45 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated that article claims cannot depend from process claims.

Applicants respectfully disagree with the Examiner. Article claims, such as a golf ball, frequently depend from process claims in issued patents. See for example, claims 3 and 4 of U.S. 6,444,442; claims 5 and 14 of U.S. 6,449,377; claim 8 of U.S. 6447,859; and claim 10 of U.S. 6,444,146. Each of the example claims is an article claim that depends from a process claim. Applicants respectfully submit that the claims are not indefinite under 35 U.S.C. 112, second paragraph. Applicants therefore respectfully request that the rejection of claims 15, 42, and 45 under 35 U.S.C. 112, second paragraph be reconsidered and withdrawn.

Claim 16 was rejected under 35 U.S.C. 102(b) as being anticipated by Newcomb (US 4,695,055). The Examiner stated that Newcomb discloses a golf ball formed from reaction injection molding, and the ball structure includes a homogeneous translucent plastic and a light stick inserted therein to make the golf ball multiple pieces. The Examiner concluded that column 1, lines 55 to 57 teach a polyurethane material for forming the ball.

Applicants respectfully submit that Newcomb does not anticipate Applicants' claim 16, and Applicants respectfully disagree with the Examiner's characterization of Newcomb. Newcomb discloses a translucent plastic golf ball having a hole through the center of the ball to hold a light stick. Contrary to the Examiner's assertions, Newcomb does not disclose a multi-piece golf ball, as defined by Applicants. The term multi-piece, or multi-layer, is known in the art. Applicants, at page 1, lines 22 to 24, define a multi-piece golf ball as a core of one or more layers and a cover of one or

more layers (i.e., at least two pieces, a core and a cover). The light stick that is placed in the center of the ball is not considered one of the pieces or layers, as defined by Applicants' specification. Newcomb does not disclose a golf ball having at least a core and a cover. Furthermore, contrary to the Examiner's assertions, Newcomb does not disclose a golf ball formed by reaction injection molding. Newcomb merely states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball formed by reaction injection molding. Additionally, Newcomb discloses thermoplastic polyurethane materials, not reaction injection molded polyurethane materials. The process and the golf ball of Newcomb are very different from Applicants' invention.

Applicants respectfully submit that for a prior art reference to anticipate, each and every element of the claims must be literally present. Applicants respectfully submit that contrary to the Examiner's assertions, Newcomb does not teach each and every element of Applicants' claim 16.

For at least these reasons, Applicants respectfully submit that claim 16 is not anticipated by Newcomb. Therefore, Applicants respectfully request that the rejection of claim 16 under 35 U.S.C. 102(b) be reconsidered and withdrawn.

Claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wu '673 in view of Newcomb. The Examiner stated that Wu discloses polyurethane golf ball parts (core or cover), the polyurethane is a reaction product of a prepolymer and a curing agent, and the prepolymer may include polyester or polyether. The Examiner further stated that the cover composition may further include zinc oxide, zinc sulfite, UV stabilizers, and/or optical brighteners, the golf ball is about 1.68 inches and the cover is dimpled, and the golf ball may be painted (coating) and have nameplating (indicia). The Examiner further stated that Wu does not disclose the polyurethane applied by reaction injection molding (RIM), but Newcomb renders it obvious to mold the polyurethane layers of the primary reference golf ball by a RIM process since such is an obvious expedient for providing the desired resiliency. The Examiner further stated that the particular details

of claims 4 to 7 are deemed conventional molding techniques that would necessarily be used in such molding processes, and regarding claims 10, 11 and 24 to 29, any other possible distinctions over the modified golf ball have been determined to be obvious lacking a showing of their criticality by a new and unexpected result. The Examiner concluded that it would be obvious to one skilled in the art to form the golf ball of Wu '673 utilizing the RIM molding method detailed by Newcomb and according to the instantly claimed numbers as the applicant has not shown that these particular numbers solve any stated purpose and it appears that the combination of Wu in view of Newcomb would accomplish similar purposes.

Applicants respectfully submit that the Examiner has failed to make out a *prima facie* case of obviousness. Wu discloses a golf ball with a specific type of polyurethane cover made from a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol (Abstract and claims). Wu teaches that several curing steps are necessary to cure the cover (column 4, line 50 to column 6, line 68). Wu does not disclose a golf ball component formed by RIM.

Applicants' invention is directed to a process for forming a golf ball component comprising the steps of: mixing two or more reactants to produce a reaction product having a flex modulus of from about 1 to about 310 Kpsi and a reaction time of less than two minutes, wherein the component formed by the mixing operation has a thickness of at least about 0.01 inches (claim 1). Applicants' invention is also directed to a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea (claim 16), and a golf ball comprising at least one fast-chemical-reaction-produced layer (claim 46).

Applicants respectfully submit that the Examiner has mischaracterized the Newcomb reference, and contrary to the Examiner's assertions, Newcomb does not "detail" a RIM molding method. Newcomb only briefly mentions the RIM process as one of many methods that can be used to mold a golf ball (column 1, lines 36 to 40), and in the case of Newcomb, a translucent plastic, one piece golf ball, and no specific process conditions are given. Newcomb does not disclose the types of urethane, or more specifically, a process comprising the step of mixing at least two liquid

precursors, nor does Newcomb disclose a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea, or a golf ball comprising at least one fast-chemical-reaction-produced layer. Additionally, as discussed above, Newcomb is directed to a translucent golf ball having a hole in the center to accommodate a light stick, and the golf ball is preferably made from a thermoplastic polyurethane material.

Applicants respectfully submit that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but this is not the standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing, multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation to combine Wu with Newcomb since Newcomb is directed to a one piece golf ball preferably made by injection molding a thermoplastic polyurethane.

Applicants respectfully disagree with the Examiner's statement that utilizing the RIM molding method detailed by Newcomb and according to the instantly claimed numbers as the applicant has not shown that these particular numbers solve any stated purpose would be obvious to one skilled in the art. First, as discussed above, Newcomb does not "detail" a RIM process at all. At most, Newcomb lists RIM as one type of process for molding a one piece golf ball, but the remainder of Newcomb focuses on other methods of making a thermoplastic golf ball. Second, Applicants have shown that the RIM process does solve a stated purpose. The RIM process has several benefits not found in conventional molding processes, including no separate mixer is needed to mix reactants; lower temperatures and pressures are used; the golf ball is more durable; and the RIM process is faster than conventional molding processes (see, for example, specification, page 31, line 15 to page 32, line 26).

For at least these reasons, Applicants respectfully submit that claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 are not obvious under 35 U.S.C. § 103(a) over Wu in view of Newcomb. Applicants therefore respectfully request that the rejection of

claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 under 35 U.S.C. § 103(a) as obvious over Wu in view of Newcomb be reconsidered and withdrawn.

Claims 13, 14, 18, 19, 41 and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wu '673 in view of Newcomb as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Bayer - RIM Part and Mold design (polyurethanes). The Examiner stated that Bayer teaches the use of glycolysis, a new way to convert polyurethane materials back to their original raw materials, therefore one skilled in the art would have modified the invention of Wu in view of Newcomb by adding recycled material to decrease manufacturing costs.

As previously discussed, Applicants respectfully submit that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but obvious to try is not the correct standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing, multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation, teaching or suggestion to combine Wu with Newcomb, which is directed to thermoplastic polyurethane one piece golf balls. The addition of another secondary reference, Bayer - RIM Part and Mold design (polyurethanes), does not remedy this defect.

For at least these reasons, Applicants respectfully submit that claims 13, 14, 18, 19, 41 and 44 are not obvious under 35 U.S.C. § 103(a) over Wu in view of Newcomb and further in view of Bayer - RIM Part and Mold design (polyurethanes). Applicants therefore respectfully request that the rejection of claims 13, 14, 18, 19, 41 and 44 under 35 U.S.C. § 103(a) as obvious over Wu in view of Newcomb and further in view of Bayer - RIM Part and Mold design (polyurethanes) be reconsidered and withdrawn.

Claim 34 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wu '673 in view of Newcomb as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Molitor '751. The Examiner stated that Wu in view of Newcomb does not disclose an ionomer blended with the polyurethane in the cover material, but Molitor teaches a cover made from a urethane and an ionomer, and one

skilled in the art would have modified the cover by including an ionomer to improve the durability of the cover.

As previously discussed, Applicants respectfully submit that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but obvious to try is not the correct standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing, multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation, teaching or suggestion to combine Wu with Newcomb, which is directed to thermoplastic polyurethane one piece golf balls. The addition of another secondary reference, Molitor, does not remedy this defect. Additionally, Molitor is directed to a cover composition comprising a thermoplastic urethane and an ionomer. Even if there was motivation to combine Wu and Newcomb, which Applicants submit there is not, the addition of Molitor for a cover formed from a urethane and an ionomer would only provide a thermoplastic urethane and ionomer blend cover.

For at least these reasons, Applicants respectfully submit that claim 34 is not obvious under 35 U.S.C. § 103(a) over Wu in view of Newcomb and further in view of Molitor '751. Applicants therefore respectfully request that the rejection of claims 13, 14, 18, 19, 41 and 44 under 35 U.S.C. § 103(a) as obvious over Wu in view of Newcomb and further in view of Molitor '751 be reconsidered and withdrawn.

Claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 were provisionally rejected as claiming the same invention as that of claims 14 to 20, 22, 27 to 32, 34 to 41 and 44 of copending Application No. 09/040,798. The Examiner stated that this is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Applicants respectfully submit that since this is only a provisional rejection at this time, Applicants will address it at a later time, when one of the applications does in fact become patented.

Claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 13, 21, 23 to 26, 33, 42 and 43 of copending Application No. 09/040,798. The Examiner stated that although the conflicting claims are not identical, they are not patentably distinct from each other because the present invention and the '798 application both claim the process of making a golf ball comprising making at least a core and a cover component by mixing two or more reactants. The Examiner further stated that the '798 application produces a product with a flex modulus from 5 to 310 kpsi in a reaction time of 5 minutes or less, and the present invention claims a product with a flex modulus from 1 to 310 kpsi in a reaction time of less than 2 minutes. The Examiner concluded that varying the reaction time of the product is an obvious modification of the '798 application that would promote the desired and/or optimal characteristics of the product.

Applicants respectfully submit that since this is only a provisional rejection at this time, Applicants will address it at a later time, when one of the applications does in fact become patented.

The Examiner is invited to telephone Applicant's attorney if it is deemed that a telephone conversation will hasten prosecution of the application.

CONCLUSION

Applicants respectfully request reconsideration and allowance of each of the presently rejected claims. Applicants respectfully request allowance of claims 1 to 48, the claims currently pending.

Respectfully submitted,

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-continued

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Pro Arg Pro Asn Lys Arg Ile Arg Asn Gln Ser Phe Asn Gln Tyr Asn
        275                 280                 285

Cys Ser Ile Asn Asn Lys Thr Glu Leu Glu Thr Trp Lys Leu Val Lys
    290                 295                 300

Thr Ser Gly Val Thr Pro Leu Pro Ile Ser Ser Glu Ala Asn Thr Gly
305                 310                 315                 320

Leu
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What is claimed is:

1. A process for producing the recombinant gp 90 Equine Infectious Anemia envelope protein consisting of an amino acid sequence of SEQ ID NO: 5 comprising culturing in *E. coli* cell under conditions whereby said protein is produced.

2. The process according to claim 1 wherein said amino acid sequence is not glycosylated.

3. An amino acid sequence consisting of SEQ ID NO:5 produced by a process of claim 1.

4. An amino acid sequence consisting of SEQ ID NO:5 produced by a process of claim 2.

5. An amino acid sequence consisting of SEQ ID NO:5 which is not glycosylated.

* * * * *

likewise be applied to video and audio, local scaling of watermark energy can be provided to enhance watermark signal-to-noise ratio without increasing human perceptibility, various filtering operations can be employed to serve the functions explained in the prior art, watermarks can include subliminal graticules to aid in image re-registration, encoding may proceed at the granularity of a single pixel (or DCT coefficient), or may similarly treat adjoining groups of pixels (or DCT coefficients), the encoding can be optimized to withstand expected forms of content corruption. Etc., etc., etc. Thus, the exemplary embodiments are only selected samples of the solutions available by combining the teachings referenced above. The other solutions necessarily are not exhaustively described herein, but are fairly within the understanding of an artisan given the foregoing disclosure and familiarity with the cited art.

I claim:

1. A method of embedding binary data in a banknote, comprising:

providing nominal line art for the banknote;

defining a plurality of virtual regions in at least an excerpt of said line art, each of said regions having an area less than 0.001 square inches; and

changing a luminance value of plural of said regions to embed binary data therein,

wherein said changes are not apparent to a human viewer of the banknote, yet can be detected from visible light scan data corresponding to said banknote.

2. The method of claim 1 further comprising changing said luminance by modulating the width of plural lines in said line art.

3. The method of claim 1 further comprising changing said luminance by modulating the position of plural lines in said line art.

4. The method of claim 1 further comprising changing said luminance by inserting new lines in said line art.

5. A banknote produced by the process of claim 1.

6. A method for encoding plural-bit digital data in a banknote, to facilitate later machine identification of the banknote, comprising:

receiving initial banknote artwork including plural artwork elements;

changing the position o r dimension of certain of said artwork elements to steganographically encode said plural-bit digital data, yielding adjusted banknote artwork; and

printing a banknote corresponding to said adjusted banknote artwork.

7. The method of claim 6 in which the initial banknote artwork includes line art, and the method includes slightly changing the positions of lines comprising said artwork to encode said plural-bit data.

8. The method of claim 7 that includes, for at least one line, changing its position in a first direction at a first region therealong, and changing its position in a second direction different than the first at a second region therealong.

9. The method of claim 6 in which the banknote artwork includes line art, and the method includes slightly changing the widths of lines comprising said artwork to encode said plural-bit data.

10. The method of claim 9, that includes, for at least one line, increasing its width in a first region, and decreasing its width in a second region.

11. The method of claim 6 that includes:

defining an array of regions spanning at least an excerpt of the initial banknote artwork; and

changing the artwork within plural of said regions to either increase or decrease the respective luminance of each.

12. The method of claim 11 in which the defining includes imposing a virtual grid over said excerpt.

13. The method of claim 6 that includes adjusting said initial artwork by inserting one or more new lines therein.

14. A banknote produced by the method of claim 6.

15. A method of watermarking a banknote to convey auxiliary data, the banknote including an element having a contour, characterized in that the method includes spatially shifting the location of said contour.

* * * * *

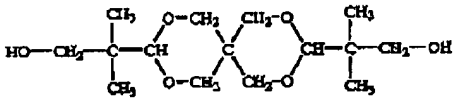
TABLE 8

	Com. Ex. 11	Com. Ex. 12	Com. Ex. 13	Com. Ex. 14
Polyester Resin				
Monomer				
dicarboxylic acid component				
(molar ratio)				
DMT	100	—	100	—
DMT/NDCM	—	25/75	—	—
DMT/PMDA	—	—	—	95/05
glycol component (molar ratio)				
CHDM/EG	33/67	—	—	—
EG	—	100	—	100
NPG/EG	—	—	30/70	—
Tg (° C.)	81	110	75	—
IV (dL/g)	0.75	0.60	0.80	—
Melt viscosity (Pa · s)	1000	1100	1000	—
Evaluation of foamed sheet				
Extrusion temperature (° C.)	170	180	170	—
Cell structure	B	C	C	—
Heat resistance	poor	good	poor	—

The polyester resin of the present invention is excellent in heat resistance, transparency, mechanical properties, moldability and fabrication qualities and, therefore, suitable as resin materials for films, sheets, hollow containers and foamed articles. Molded articles produced from the polyester resin of the present invention are industrially useful as food packaging materials, building materials or the like.

What is claimed is:

1. A polyester resin produced by polymerizing a monomer mixture comprising a glycol component containing 5 to 60 mol % of a spiroglycol represented by Formula I:



(I)

and 30 to 95 mol % of ethylene glycol, and a dicarboxylic acid component containing 80 to 100 mol % of terephthalic acid and/or an ester thereof; the polyester resin satisfying the following requirements (1) to (4):

(1) an intrinsic viscosity of 0.4 to 1.5 dL/g when measured at 25° C. in a 6/4 by mass mixed solvent of phenol/1,1,2,2-tetrachloroethane;

(2) a melt viscosity of 700 to 5,000 Pa·s when measured at 240° C. under a shear rate of 100 s^{-1};

(3) a molecular weight distribution of 2.5 to 12.0; and

(4) a glass transition temperature of 90° C. or higher, and a cooling crystallization exotherm peak of 5 J/g or lower, when measured by a differential scanning calorimeter.

2. The polyester resin according to claim 1, wherein the glycol component contains 20 to 40 mol % of the spiroglycol represented by Formula I and 50 to 80 mol % of ethylene glycol.

3. The polyester resin according to claim 1, wherein the dicarboxylic acid component contains 95 to 100 mol % of terephthalic acid and/or an ester thereof.

4. The polyester resin according to claim 1, wherein the glycol component contains 15 to 60 mol % of the spiroglycol represented by Formula I, and 40 to 85 mol % of ethylene glycol.

5. The polyester resin according to claim 1, which is made into a polyester film or sheet, the polyester film or sheet having a drop-weight breaking strength of 10 kJ/m or higher when vertically applying an impact energy of 300 J by dropping a semispherical weight of 20 mm diameter on the polyester film or sheet.

6. The polyester resin according to claim 1, which is made into a hollow container.

7. A process for producing a foamed polyester sheet, comprising:

melt-kneading the polyester resin according to claim 4 in the presence of a foaming agent in an extruder; and

extruding the polyester resin into a low pressure region.

8. A foamed polyester sheet produced by the process according to claim 7.

9. The foamed polyester sheet according to claim 8, wherein the sheet has a thickness of 0.2 to 7 mm and a closed cell content of at least 50%.

10. A molded article made of the polyester resin of claim 1.

11. The polyester resin according to claim 4, wherein the dicarboxylic acid component contains 90 to 100 mol % of terephthalic acid and/or an ester thereof.

12. A foamed polyester article, made of the polyester resin of claim 11.

13. A polyester resin according to claim 1, wherein the glycol component includes up to 10 mol % of an additional glycol other than said spiroglycol represented by Formula I and ethylene glycol.

* * * * *

TABLE 1-continued

Comparative Examples				
1	—	light-yellowish transparency	1.70	36
2	BlueG (0.0000008)	light-yellowish transparency	1.70	36
3	BlueG (0.7)	bluish transparency	1.70	36
4	—	yellowish transparency	1.70	36
5	—	yellowish transparency	1.71	36

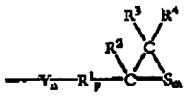
BlueG: Diaresin Blue G (Anthraquinone pigment produced by Mitsubishi Chemical Corp.) C.I. Solvent Violet 36
BlueA-D: Kayaset Blue A-D (Anthraquinone pigment produced by Nippon Kayaku Co. Ltd.) C.I. Solvent Violet 33
RedHL5B: Sumiplast HL5B (Anthraquinone pigment produced by Sumitomo Chemical Corp.) C.I. Pigment Red 83

What is claimed is:

1. A process for producing an optical material, comprising:

adding a bluing agent to a composition for optical materials comprising a compound having a radical represented by the formula (I):

(I)



wherein R^1 is C_1-C_{10} hydrocarbon group; R^2, R^3 and R^4 are each independently C_1-C_{10} hydrocarbon group or hydrogen; Y is O, S, Se or Te; p is 0 or 1; m is an integer of 1 to 5; and n is an integer of 0 to 5, thereby preparing a molding composition; and

subjecting the molding composition to polymerization and curing in a mold.

2. The process according to claim 1, wherein the amount of the compound having the radical represented by the formula (I) is 10% by weight or more based on the total weight of the composition for optical materials.

3. The process according to claim 1, wherein the bluing agent is added to the composition for optical materials in an amount of 0.000001 to 0.5 part by weight based on 100 parts by weight of the composition.

4. The process according to claim 1, wherein the bluing agent is an anthraquinone compound.

5. The process according to claim 1, wherein the molding composition is prepared by mixing at −50 to 100° C. for one minute to 5 hours.

6. The process according to claim 1, wherein the molding composition is subjected to pre-polymerization at −100 to 160° C. for 0.1 to 288 hours prior to injecting the molding composition into the mold.

7. The process according to claim 1, wherein the molding composition is subjected to polymerization/curing at −10 to 160° C. for 0.1 to 100 hours.

8. The process according to claim 1, wherein the composition for optical materials is further added with a red anthraquinone compound, an orange anthraquinone compound or a brown anthraquinone compound.

9. The process according to claim 8, wherein the red anthraquinone compound, an orange anthraquinone compound or a brown anthraquinone compound is added in an amount of 0.000001 to 0.0005 part by weight based on 100 parts by weight of the composition for optical materials.

10. An optical material produced by the process according to claim 1.

* * * * *